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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/492,373	01/27/2000	Yuzo Horikoshi	991444	9795

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EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 05/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/492,373

Applicant(s)

HORIKOSHI ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-10 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2, 4-10, and 14-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Continued Prosecution Application

1. The request filed on 2/19/02 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/492,373 is acceptable and a CPA has been established. An action on the CPA follows.

Objection to New Matter in the Specification

2. The amendment, previously filed 1/16/02 and now entered with the filing of the above described CPA, is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

With respect to the change in the specification in the paragraph beginning at page 7, line 23, this change is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. The added material, which is not supported by the original disclosure, is the amendment to lines 23 and 24 that amends the upper limit of the glass transition temperature for the copolymer from 70 °C to 50 °C. While the specification as originally filed discloses in Table 1, page 13 several examples of copolymers that possess glass transition temperature of 45, 10, 40, 42, 65, 38, and 15 °C, there is no support for the recitation of the upper limit of the glass transition temperature as 50 °C.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-2, 4-10, and 14-18 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

(a) Claims 1, 14, 16, and 17 have each been amended to recite "1 wt% or more of polymeric monomer including a polar group". It is the examiner's position that this change fails to satisfy the written description requirement under 35 USC 112, first paragraph since there does not appear to be a written description requirement for this phrase in the application as originally filed, In re Wright, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163.

Applicants point to page 11, line 19 and after in the specification as support for this phrase. However, page 11, line 19 discloses that it is preferable to use copolymer characterized in being synthetically prepared "from at least one kind of radical polymeric monomer having a polymer group selected from styrene and styrene derivative, (b) alkyl acrylate, alkyl methacrylate and derivatives thereof". There is no disclosure or suggestion that the copolymer includes in addition to styrene and alkyl (meth) acrylate "1 wt% or more of polymer monomer including a polar group". It is noted that Table 1 on page 13 of the specification discloses

copolymers obtained from monomers, in addition to styrene and alkyl (meth) acrylate, such as (meth)acrylic acid, vinyl pyridine, 2-hydroxypropyl-N,N,N-trimethylammonium chloride acrylate, and N,N-diallylmethylammonium chloride, in amounts of 5%, 7%, and 10%. However, these few specific embodiments do not provide support for applicant to broadly recite "polymeric monomer containing polar groups" in the claims. Further, the recitation of "1 wt% or more" clearly encompasses any amount greater than or equal to 1% such as 20%, 50%, 80%, etc. for which there is clearly no support in the specification.

(b) Claims 1, 14, 16, and 17 each recite that the copolymer has "glass transition point less than or equal to 50⁰ C" while claim 4 recites that the copolymer has a "glass transition temperature of -30 through 50⁰ C". It is the examiner's position that these claims fails to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement for the upper limit of the glass transition temperature of 50⁰ C in the application as originally filed. In re Wright, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163.

It is noted that applicants' amendment filed 1/16/02, and now entered, amends page 7, lines 23-24 of the present specification to recite that the upper limit of the glass transition temperature is 50⁰C, however, this change is objected to under 35 USC 132 (see paragraph 2 above), so the above rejection is set forth.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-2, 4-10, and 14-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claims 1, 14, 16, and 17 each recite that the copolymer is obtained "from a radical polymeric monomer consisting essentially of: (a) 20 through 99 wt% of styrene and styrene derivative; (b) 10 through 80 wt% alkyl acrylate, alkyl methacrylate and derivatives of alkyl acrylate and alkyl methacrylate; and (c) 1 wt% or more of polymer monomer including a polar group". The scope of each of the claims is confusing because it is not clear what is meant by a monomer "consisting essentially of" three monomers, i.e. styrene, alkyl (meth)acrylate, and monomer including a polar group. How does a monomer consist essentially of three monomers? Further, it is not clear if the copolymer is obtained from each of the recited styrene, alkyl (meth)acrylate, and monomer including a polar group or only one of these monomers or only two of these monomers.

Further, claims 1, 14, and 16-17 each recite that the monomers include "styrene and styrene derivatives" and "alkyl acrylate, alkyl methacrylate, and derivatives of alkyl acrylate and alkyl methacrylate". The scope of the claims is confusing because it is not clear what is meant by "derivatives". What compounds are encompassed by this phrase? For instance, do alkyl acrylate and alkyl methacrylate derivatives include hydroxyalkyl (meth)acrylates, aminoalkyl (meth)acrylates, etc.?

(b) Claim 18 recites that "piezo-type inkjet head". The scope of the claim is confusing because it is not clear what is meant by "piezo-type". The addition of the word "type" extends the scope of the claims so as to render them indefinite since it is unclear what "type" is intended to convey. The addition of the word "type" to the otherwise definite expression renders the definite expression indefinite by extending its scope. Ex parte Copenhaver, 109 USPQ 118 (Bd. App. 1955).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-2, 4, 6-10, 14, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al. (U.S. 6,248,805) in view of Patel et al. (U.S. 5,977,210).

Nguyen et al. disclose an ink jet ink comprising (i) 0.1-10% polymer which has the structure $A_xB_yC'_z$ where A is a hydrophobic monomer such as alkyl (meth)acrylate, B is a hydrophobic monomer such as styrene, and C' is a monomer which has a highly polar functional group including (meth)acrylic acid, (ii) solvent which is liquid at room temperature, and (iii) colorant which is a dye or pigment wherein the colorant is dispersed in the polymer. The polymer has glass transition temperature of -25 to 110°C and is produced using emulsion polymerization. The ink is printed using an ink jet printer which would intrinsically possess an ink cartridge to store the ink. It is also disclosed that in one embodiment, the polymer encapsulates the colorant so that the colorant clearly absorbs on or coats the surface of the polymer, however, it is further disclosed that there is no limit to the type of association between the colorant and the polymer. Further, given that all the ingredients are mixed together when forming the ink, it is clear that the colorant is intrinsically dispersed in the solvent (col.4, lines 39-48 and 52-53, col.5, lines 2-12, 18-20, and 25-34, and col.6, lines 8-20, 26-36, and 46-50, col.7, lines 34-55, col.10, line 48, col.13, lines 58-60, col.19, lines 35 and 54-61, col.22, lines 8-10, and col.26, line 66-col.27, line 15).

The difference between Nguyen et al. and the present claimed invention is the requirement in the claims of (a) the volume average particle diameter of the polymer and (b) piezo-type ink jet head.

With respect to difference (a), on the one hand, given that Nguyen et al. produces the polymer by emulsion polymerization as presently claimed, it would have been natural for one of ordinary skill in the art to infer that the polymer intrinsically possesses the same volume average particle diameter as presently claimed, and thus one of ordinary skill in the art would have arrived at the claimed invention.

On the other hand, Patel et al., which is drawn to ink jet inks, disclose the use of polymer having volume average particle size of 0.1-1 micron in order to produce an ink that will not clog the printer nozzles (col.3, lines 14-15 and col.4, lines 57-59).

In light of the motivation for using copolymer having specific volume average particle diameter disclosed by Patel et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use polymer with such volume average particle diameter in the ink of Nguyen et al. in order to produce an ink which will not clog the printer nozzles, and thereby arrive at the claimed invention.

With respect to difference (b), Nguyen et al. disclose the use of thermal ink jet printers (col.2, lines 46-52), however, there is no explicit disclosure of the use of printers containing piezo-type inkjet head as presently claimed.

Patel et al., which is drawn to ink jet ink, disclose the equivalence and interchangeability of thermal ink jet printer, as disclosed by Nguyen et al., with piezoelectric ink jet printer, as

presently claimed, as devices used to cause droplets of ink to be ejected in an imagewise pattern on a substrate to generate images (col.7, lines 36-43).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use piezoelectric ink jet printer to print the ink of Nguyen et al., and thereby arrive at the claimed invention.

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al. in view of Patel et al. as applied to claims 1-2, 4, 6-10, 14, and 16-18 above, and further in view of either *Polymer Science Dictionary* or Fujisawa et al. (U.S. 5,997,136).

The difference between Nguyen et al. in view of Patel et al. and the present claimed invention is the requirement in the claims of the softening temperature of the polymer.

On the one hand, given that Nguyen et al. discloses copolymers identical to those presently claimed, i.e. obtained from the same types and amounts of monomers, it would have been natural for one of ordinary skill in the art to infer that the polymers intrinsically possess the same softening temperature as presently claimed, and thereby arrive at the claimed invention. Evidence to support this position is found in *Polymer Science Dictionary* (page 526) which discloses that the value of the softening point for polymers lies in the vicinity of the glass transition temperature of the polymer. Given that Nguyen et al. disclose copolymer having glass transition temperature as presently claimed, it is clear, in light of the teaching in *Polymer Science Dictionary*, that the softening temperature of the copolymer of Nguyen et al. will also overlap the softening temperature as presently claimed.

On the other hand, Fujisawa et al., which is drawn to ink jet inks, disclose that the softening temperature of polymers utilized in ink jet inks range from 50⁰ -120⁰ C wherein such temperature allows the ink to be heated quickly so that the ink dot is formed before penetration of ink into recording medium occurs so that feathering of the ink on the recording medium is prevented (col.3, lines 13-35).

In light of the motivation for using polymer with specific softening temperature disclosed by Fujisawa et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use polymer with such softening temperature in the ink of Nguyen et al. in order to produce an ink which does not feather, and thereby arrive at the claimed invention.

11. Claim 1-2, 4, 8-10, 14, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patel et al. (U.S. 5,977,210) in view of Satake et al. (U.S. 5,814,685).

Patel et al. disclose an ink jet ink comprising (i) copolymer particle obtained from monomers including styrene, butyl acrylate, and acrylic acid, (ii) solvent that is liquid at room temperature, and (iii) colorant which is dispersed in solvent wherein the copolymer particle has volume average diameter of 0.1-1 micron. It is further disclosed that the copolymer is prepared by emulsion polymerization. It is further disclosed that the ink is printed using ink jet printer including those comprising piezoelectric head where such ink jet printer would inherently possess an ink cartridge which would house the ink (col.1, lines 6-7 and 64-67, col.2, lines 56-61, col.4, lines 51-66, col.5, lines 22-26, col.6, lines 58-60, col.7, lines 36-38).

The difference between Patel et al. and the present claimed invention is the requirement in the claims of the glass transition temperature of the copolymer as well as the amount of monomer which comprise the copolymer.

While example 1 of Patel et al. discloses a copolymer comprising 12% butyl acrylate, 88% styrene, and 2% acrylic acid and possessing glass transition temperature of 60⁰ C, this is only one preferred embodiment of Patel et al. A fair reading of the reference as a whole broadly discloses the use of several copolymers including those obtained from styrene, butyl acrylate, and acrylic acid (col.4, lines 61-64). Further, it is well known, as found in Satake et al., that the glass transition temperature of a polymer is controlled by the type and amounts of monomer which comprise the monomer and further that the glass transition temperature in turn effects the water resistance, dispersibility, and viscosity of the ink (col.3, line 53-col.4, line 19).

In light of the above, it would have been obvious to one of ordinary skill in the art to control the amount of monomer as well as the glass transition temperature to values, including those presently claimed, in Patel et al. in order to produce an ink with suitable water resistance, dispersibility, and viscosity, and thereby arrive at the claimed invention.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Patel et al. in view of Satake et al. as applied to claims 1-2, 4, 8-10, 14, and 16-18 above, and further in view of Fujisawa et al. (U.S. 5,997,136).

The difference between Patel et al. in view of Satake et al. and the present claimed invention is the requirement in the claims of the softening temperature of the copolymer.

Fujisawa et al., which is drawn to ink jet inks, disclose that the softening temperature of polymers utilized in ink jet inks range from 50⁰ -120⁰ C wherein such temperature allows the ink to be heated quickly so that the ink dot is formed before penetration of ink into recording medium occurs so that feathering of the ink on the recording medium is prevented (col.3, lines 13-35).

In light of the motivation for using copolymer with specific softening temperature disclosed by Fujisawa et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use copolymer with such softening temperature in the ink of Patel et al. in order to produce an ink which does not feather, and thereby arrive at the claimed invention.

13. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Patel et al. in view of Satake et al. as applied to claims 1-2, 4, 8-10, 14, and 16-18 above, and further in view of Nkansah et al. (U.S. 5,962,580).

The difference between Patel et al. in view of Satake et al. and the present claimed invention is the requirement in the claims of surfactant covering a surface of the copolymer.

Patel et al. disclose a surfactant and copolymer, but there is no explicit disclosure in any of the references that the surfactant covers a surface of the copolymer.

On the one hand, given that the surfactant and copolymer are mixed together in Patel et al. in order to produce an ink, it would have been natural for one of ordinary skill in the art to infer that the surfactant intrinsically covers a surface of the copolymer as a result of the mixing process, and thereby arrive at the claimed invention.

On the other hand, Nkansah et al., which is drawn to aqueous coating compositions, disclose the use of polymer covered with surfactant in order to improve the color acceptance of the composition (col.1, lines 38-50 and col.4, lines 5-20).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to cover the surface of the copolymer with surfactant in the ink of Patel et al. in order to produce an ink that has improved color acceptance, and thereby arrive at the claimed invention.

Response to Arguments regarding 35 USC 112 rejections

14. Applicants' arguments have been fully considered but they are not persuasive.

Specifically, with respect to the rejection given in paragraph 6a above, applicants argue that the term "derivatives" is commonly used in patent claims and states that thousands of patents include this term in their claims. However, "it is immaterial whether similar claims have been allowed in another application", In re Giolito et al., 188 USPQ 645. The examiner's position remains that it is not clear what compounds are encompassed by this phrase. For instance, does derivatives of alkyl acrylate and alkyl methacrylate include hydroxyalkyl (meth)acrylates, aminoalkyl (meth)acrylates, etc?

With respect to the rejection given in paragraph 4b above, applicants argue that the subject matter of the claim need not be described literally in order for the disclosure to satisfy the description requirement and cite In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). In Wertheim, the ranges described in the original specification included a range of 25-60% and specific examples of 36% and 50%. The courts held that a limitation to "between 35% and 60%" did meet the description requirement.

However, it is the examiner's position that the present situation is not like that described in Wertheim. In the present specification (not including the changes to the specification which are objected to as described in paragraph 2 above), it is disclosed that the copolymer has the glass transition point of "at or below 70 °C" and "from -30 through 70 °C" and there are examples in Table 1, page 13 of copolymers with glass transition point of 45, 10, 40, 42, 65, 38, and 15 °C. Therefore, the value used in the range in Wertheim is much closer to the value disclosed in the example than in the present instance. That is, in Wertheim, the difference between the example and the claim is approximately 3%, i.e. percent difference between 35 and 36, while in the present application there is a difference between the example and the claim of about 11%, i.e. percent difference between 45 and 50. Further, in Wertheim, the claim range does not encompass 35% itself, but rather amounts between 35% and 60%, while in the present application, applicants amendment does encompass 50 °C.

Applicants also cite MPEP 2163.02 and argue that the disclosure of the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention claimed, i.e. upper limit of glass transition point of 50 °C. However, while Table 1, discloses glass transition points below 50 °C, this does not provide support for the amendment "glass transition point less than or equal to 50 °C" or "glass transition point of -30 through 50 °C". That is, there is no support for the upper limit of 50 °C. Further, in the same portion of MPEP 2163.02, page 2100-167 of the MPEP cited by applicants, it is stated that "if a claim is amended to include subject matter, limitations, or terminology not present in the application as filed, involving a departure from, addition to, or deletion from the disclosure of the application as filed, the examiner should conclude that the claimed subject

matter is not described in that application.” It is the examiner’s position that amending the present claims to recite 50 °C as the upper limit of the glass transition point does in fact involve a departure from as well as an addition to the disclosure of the application as filed.

Arguments regarding 35 USC 103 rejections

15. Applicants’ arguments filed 1/16/02 have been fully considered but they are not persuasive.

Specifically, applicants argue that none of the cited references teach a polymer comprising “1 or more wt% of polymeric monomer including a polar group”.

However, it is noted that col.4, lines 51-53 and example 1 of Patel et al. do in fact disclose polymer comprising styrene, alkyl acrylate, and acrylic acid as presently claimed. Although, example 1 of Patel et al. discloses a copolymer comprising 12% butyl acrylate, 88% styrene, and 2% acrylic acid and possessing glass transition temperature of 60° C, this is only one preferred embodiment of Patel et al. A fair reading of the reference as a whole broadly discloses the use of several copolymers including those obtained from styrene, butyl acrylate, and acrylic acid (col.4, lines 61-64). Further, it is well known, as found in Satake et al., that the glass transition temperature of a polymer is controlled by the type and amounts of monomer which comprise the monomer and further that the glass transition temperature in turn effects the water resistance, dispersibility, and viscosity of the ink (col.3, line 53-col.4, line 19).

In light of the above, it would have been obvious to one of ordinary skill in the art to control the amount of monomer as well as the glass transition temperature to values, including

those presently claimed, in Patel et al. in order to produce an ink with suitable water resistance, dispersibility, and viscosity, and thereby arrive at the claimed invention.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Callie Shosho
May 14, 2002

Callie E. Shosho
Examiner
Art Unit 1714